27.8 Contraception can prevent unwanted pregnancy

Contraception is the deliberate prevention of pregnancy. Table 27.8 lists common methods of contraception, with their failure rates when used correctly and when used typically. Note that these two rates are often quite different, emphasizing the importance of learning to use contraception correctly. It is also important to note that the "safe sex" provided by condoms can prevent both unwanted pregnancy and sexually transmitted diseases; this is not true of other contraceptive methods.

Complete abstinence (avoiding intercourse) is the only totally effective method of birth control, but other methods are effective to varying degrees. Sterilization, surgery that prevents sperm from reaching an ovum, is very reliable. A woman may have a **tubal ligation**, in which a doctor removes a short section from each oviduct (and may tie, or ligate, the remaining ends). A man may undergo a **vasectomy**, in which a doctor cuts a section out of each vas deferens to prevent sperm from reaching the urethra. Both forms of sterilization are relatively safe and free from side effects but are permanent.

The effectiveness of other methods of contraception depends on how they are used. Temporary abstinence, also called the **rhythm method** or **natural family planning**, depends on refraining from intercourse during the days around ovulation, when fertilization is most likely. It is difficult, however, to predict ovulation accurately. Thus, while the rhythm method is reliable in theory, in practice it is among the least reliable methods of contraception. **Withdrawal** of the penis from the vagina before ejaculation is also ineffective because some sperm may be released before climax.

If used correctly, **barrier methods** can be quite effective at physically preventing the union of sperm and egg. Condoms are sheaths, usually made of latex, that fit over the penis or within the vagina (**Figure 27.8**). A diaphragm is a dome-shaped rubber cap that covers the cervix; a cervical cap is similar but thimble-shaped and smaller. Both require a doctor's visit for proper fitting. Barrier devices (including condoms) are more effective when used in combination with **spermicides**, sperm-killing foam or jelly; spermicides used alone are not particularly reliable.

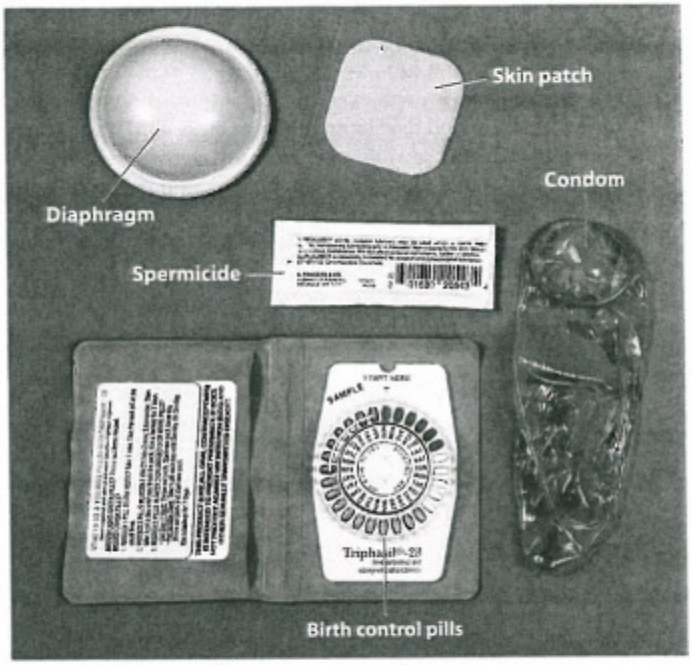

Figure 27.8 Some contraceptive devices

Some of the most effective methods of contraception prevent the release of gametes. **Oral contraceptives**, or **birth control pills**, come in several different forms that vary in their combinations of hormones. The most widely used pills contain a combination of synthetic estrogen and a synthetic progesterone-like hormone called progestin. "The pill" prevents ovulation and keeps follicles from developing. Combined hormone contraceptives are also available as an injection, a ring inserted into the vagina, or a skin patch. The hormone progestin by itself is available as tablets (the "minipill") or as injections that last for three months (Depo-Provera).

Certain drugs can prevent fertilization or implantation even after intercourse has occurred. Combination birth control pills can be prescribed in high doses for emergency contraception; they function as **morning after pills** (**MAPs**). If taken within three days after unprotected intercourse, MAPs are about 75% effective. Such treatments should only be used in emergencies because they have significant side effects. If pregnancy has already occurred, the drug mifepristone can induce an abortion during the first seven weeks of pregnancy. Mifepristone requires a doctor's prescription and several visits to a medical facility.

TABLE 27.8 CONTRACEPTIVE METHODS

Method	Pregnancies/100 Women/Year* Used Perfectly	Typically
Birth control pill (combination)	0.1	5
Vasectomy	0.1	0.15
Tubal ligation	0.2	0.5
Progestin minipill	0.5	5
Rhythm	1–9	20
Withdrawal	4	19
Condom (male)	3	14
Diaphragm and spermicide	6	20
Spermicide alone	6	26

*Without contraception, about 85 pregnancies would occur.

? _____ is to males as tubal ligation is to _____.

Vasectomy . . . females ■